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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/025,357 | CAHILL ET AL. | |
| | Examiner | Art Unit | |
| | Dennis Rosario | 2621 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *17 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *2-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *1/6/05 & 12/19/01* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. The amendment was received on March 17, 2006. Claims 2-28 are pending.

### *Response to Arguments*

2. Applicant's arguments on pages 32,33 with respect to claim 3,filed 3/17/2006 have been fully considered but they are not persuasive.

While the examiner agrees with the applicant that Takiguchi et al. does not teach an exposure transform that change pixel intensities as mentioned on page 32, last paragraph, changing pixel intensities using an exposure transform is not claimed and instead the following is claimed in claim 3:

"applying a metric exposure transform to a source digital image such that the pixel values of the source digital image are linearly or logarithmically related to scene intensity."

In another interpretation of the above portion of claim 3 the examiner interprets the portion using Takiguchi et al. (US Patent 6,549,681 B1) as follows:

applying a metric exposure transform (or a histogram as shown in fig. 23) to a source digital image such that the pixel values (or luminance values along the luminance axis of figure 23) of the source digital image are linearly related to scene intensity (since the luminance values along the luminance axis are in a linear arrangement along the luminance axis and where each luminance value on the luminance axis corresponds to the claimed scene intensity or the luminance of either PAPER or a CHARACTER as shown in fig. 23).

3. Applicant's arguments on page 34, last paragraph, filed 3/17/2006 have been fully considered but they are not persuasive and states:

> "This sentence describes two different extraction methods. The rejection incorrectly combines them into one."

While the examiner agrees with the applicant that the rejection incorrectly combines them into one, the examiner upon further consideration misinterpreted the "sentence" with respect to the middle point for the inclined portion.

However, the examiner has a new interpretation of a portion of claim 5, lines 17-20:

wherein the cropping criterion (fig. 66,num. 81) specifies that the cropped digital image is the composite digital image region that is largest in area of the set of all composite digital image regions (as shown in the shaded region of fig. 67,num. 72) having said aspect ratio L:H (or segments from point p1 to point p4 and point p4 to point p3) that are centered at the centroid (the shaded region is in the center of fig. 67,num. 71) of the main subject of the composite digital image.

4. Applicant's arguments on page 34, last paragraph, filed 3/17/2006 have been fully considered but they are not persuasive and states:

> "In any case, the discussed extraction methods do not disclose or suggest automatically computing a main subject of the composite digital image using a reasoning engine, as required by Claim 5."

The examiner respectfully disagrees. Since Takiguchi et al. does disclose automatically (or "automatically" in col. 15, line 42 with respect to a "user" in col. 15, line 40) computing a main subject (or "charac-ters" in col. 12, lines 38,39 or a natural image as shown in fig. 8, label: NATURAL IMAGE) of the composite digital image (that includes "overlaps" in col. 12, line 45) using a reasoning engine (fig. 5,num. 517).

Note that in claim 5 the claimed reasoning engine does not have any influence on any of the limitations. The examiner suggests using the results of the reasoning engine, but there appears to be no limitation that uses the results of the reasoning engine.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 2-12,26 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Takiguchi et al. (US Patent 6,549,681 B1).

Regarding claim 5, Takiguchi et al. discloses a method for producing a cropped digital image, comprising the steps of:

a) providing a plurality of partially overlapping source digital images (fig. 64a, numerals 61 and 62);

b) providing a cropping aspect ratio L:H (fig. 67, labels p1-p4), the cropping aspect ratio being the ratio of the length (p1 and p2) to the height (p1 and p4) of the cropped digital image;

c) providing a cropping criterion (fig. 67, label: CONDITION), the cropping criterion being a criterion for the size and location (Fig. 67, label: CONDITION has a plurality of associated formulas that inherently describe size and location.) of the cropped digital image;

d) combining the source digital images to form a composite digital image (Fig. 62);

e) automatically (or "automatically" in col. 15, line 42 with respect to a "user" in col. 15, line 40) computing a main subject (or "charac-ters" in col. 12, lines 38,39 or a natural image as shown in fig. 8, label: NATURAL IMAGE) of the composite digital image (that includes "overlaps" in col. 12, line 45) using a reasoning engine (fig. 5,num. 517);

f) automatically selecting (or "automatically extract-ing" in col. 5, lines 57,58) the cropping region ("rectangular area" in col. 5, line 59) of the composite digital image according the cropping criterion, said cropping region being a rectangular region having aspect ratio L:H (Fig. 67, labels: the length of p1 and p2: and the length of p1 and p4), and having size and location determined by the cropping criterion; and

g) cropping the composite digital image to the cropping region to form a cropped digital image (Fig. 64D);

h) wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area (Fig. 64A-64C clearly shows the claimed "largest in area" in the shaded regions) of the set of all composite digital image regions having said aspect ratio L:H (determined according to the formulas of fig.

67) that are centered at the centroid (Figures 64A-64C clearly shows the shaded regions that are centered between two images) of the main subject (or "charac-ters" in col. 12, lines 38,39 or a natural image as shown in fig. 8, label: NATURAL IMAGE regardless if the main subject was detected from the claimed reasoning engine) of the composite digital image.

Claims 3 including limitation "a)", 4 and 28 are rejected the same as claim 5. Thus, argument similar to that presented above for claim 5 is equally applicable to claims 3, "a)",4 and 28 except for the additional limitation as disclosed in Takiguchi et al. of:

i) and wherein the source digital images have pixel values (or luminance values along the luminance axis of figure 23) that are linearly related to scene intensity (since the luminance values along the luminance axis are in a linear arrangement along the luminance axis and where each luminance value on the luminance axis corresponds to the claimed scene intensity or the luminance of either PAPER or a CHARACTER as shown in fig. 23) and

j) the step of providing source digital images further comprises:

j1) applying a metric exposure transform (or a histogram as shown in fig. 23) to a source digital image such that the pixel values of the source digital image are linearly related to scene intensity (as described in paragraph "i)" above.

Regarding claim 2, Takiguchi et al. discloses the method claimed in claim 3, wherein the step of providing source digital images further comprises:

a) the step of digitizing source photographic images (fig. 55, num. 7 is an "electronic camera" in col. 41, lines 45,46 that inherently captures electronic or digital images.) to form source digital images.

Regarding claim 6, Takiguchi et al. discloses the method claimed in claim 3, further comprising the step of:

g) resizing the cropped digital image for display (Fig. 69, num. 101 is a resized image as compared to image 106 of fig. 69.).

Regarding claim 7, Takiguchi et al. discloses method claimed in claim 3 , further comprising the step of:

g) resizing the cropped digital image (as mentioned in claim 6) for hardcopy output (Fig. 40, step S3601. Note that Takiguchi et al. states that the "present invention is not limited to the specific embodiments described in the specification" in col. 63, lines 53,54. Thus the printer of fig. 40 of one embodiment can be used with the embodiment of fig. 55.).

Regarding claim 8, Takiguchi et al. discloses the method claimed in claim 3, further comprising the step of:

g) transforming the pixel values (Fig. 55, num. 18) of the cropped digital image to an output device compatible color space (Fig. 2 is a display with a certain size or space.).

Regarding claim 9, Takiguchi et al. discloses the method in claim 3, wherein the source digital images have pixel values that are linearly or logarithmically related to scene intensity (Fig. 24,label "a1" shows a "smooth continuation of the image lines "col. 2, lines 8,9).

Claim 10 is rejected the same as claim 9. Thus, argument similar to that presented above for claim 9 is equally applicable to claim 10 except for the additional limitation of a metric transform or "histogram" in col. 12, line 44 and shown in fig. 24.

Regarding claim 11, Takiguchi et al. discloses the method of claim 9, wherein the step of providing source digital images further comprises:

a) applying linear exposure transform(s) (or "coor-dinate transformation" in col. 40, lines 16,17.) to one or more of the source digital images to produce source digital images having pixel values that closely match (The above mentioned coordinate transformation is used for "matching" in col. 40, line 4 as shown in fig. 62.) in an overlapping region.

Claim 12 is rejected the same as claim 11. Thus, argument similar to that presented above for claim 11 is equally applicable to claim 12 except for the limitation of exposure falloff or "shift" in col. 1, line 65 or "shifting" in col. 39, line 66 in terms of a "lens" in col. 1, line 64 during recording.

Regarding claim 26, Takiguchi et al. discloses a system for producing a cropped digital image, comprising:

a) a plurality of partially overlapping source digital images (fig. 64a, numerals 61 and 62);

b) means for specifying (Fig. 66 includes a table column labeled: EXTRATION AREA as a means for specifying.) a cropping aspect ratio L:H (fig. 67, labels p1-p4), the cropping aspect ratio being the ratio of the length (p1 and p2) to the height (p1 and p4) of the cropped digital image;

c) means for specifying (Fig. 66 includes a table column labeled: CONDITION as a means for specifying.) a cropping criterion (fig. 67, label: CONDITION), the cropping criterion being a criterion for the size and location (Fig. 67, label: CONDITION has a plurality of associated formulas that inherently describe size and location.) of the cropped digital image;

d) means for combining the source digital images (Fig. 59 is a means for combining or "MATCHING" in fig. 59 ,step S11.) to form a composite digital image (Fig. 62);

e) means for (fig. 5,num. 517) automatically (or "automatically" in col. 15, line 42 with respect to a "user" in col. 15, line 40) computing a main subject (or "charac-ters" in col. 12, lines 38,39 or a natural image as shown in fig. 8, label: NATURAL IMAGE) of the composite digital image (that includes "overlaps" in col. 12, line 45) using a reasoning engine (fig. 5,num. 517);

f) means for automatically (Fig.55, num. 28 is an "automatic" in col. 41, lines 51-53 process.) selecting ( or "automatically extract-ing" in col. 5, lines 57,58) the cropping region ("rectangular area" in col. 5, line 59) of the composite digital image according the cropping criterion, said cropping region being a rectangular region having aspect ratio L:H (Fig. 67, labels: the length of p1 and p2: and the length of p1 and p4), and having size and location determined by the cropping criterion; and

g) means for cropping (Fig. 68, step S52 is a means for cropping or extracting.) the composite digital image to the cropping region to form a cropped digital image (Fig. 64D);

h) wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area (Fig. 64A-64C clearly shows the claimed "largest in area.") of:

h1) the set of all composite digital image regions (fig. 67 shows two image regions labeled A for one image and C for the other image.) having said aspect ratio L:H (p1-p4 determined according to the formulas of fig. 67) that are centered at the centroid (the shaded region is in the center of fig. 67,num. 71) of the main subject of the composite digital image.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3,13,14,16 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burt et al. (US Patent 5,649,032 A) in view of Takiguchi et al. (US Patent 6,549,681 B1).

Regarding claim 3, Burt et al. discloses a method for producing a cropped digital image, comprising the steps of:

a) providing (Fig. 3, label "INPUT IMAGE".) a plurality of partially overlapping source digital images (Fig. 2A shows a plurality of partially overlapping images which are used to generate a mosaic image.);

b) providing a cropping aspect ratio L:H (Fig. ,num. 302 provides a "cropping...size" in col. 6, line 15), the cropping aspect ratio being the ratio of the length to the height of the cropped digital image;

c) providing a cropping criterion ("parameters" in col. 11, line 3 are used as criteria for "cropping functions" in col. 2, line 32 or a "cropping function" in col.11, line 3.), the cropping criterion being a criterion for the size and location of the cropped digital image (or "region of interest" in col. 11, line 3 inherently has a size and location.);

d) combining (Fig. 3,num. 304:COMBINATION PROCESS) the source digital images (Fig. 2A shows a plurality of partially overlapping images for combining.) to form a composite digital image (Fig. 2A shows a plurality of partially overlapping images which are used to generate a mosaic image.);

e) automatically selecting (Fig. 3,num. 302: SELECTION PROCESS is a means for an "automatic[ ]" in col. 10, line 56 "selection function[ ]" in col. 10, line 55. Where the "selection functions may include cropping" in col. 10, line 53. Thus, fig. 3,num. 302 automatically selects cropping as indicated in fig. 5,num. 504: CROPPING.) the cropping region (Fig. 3,num. 302: SELECTION PROCESS is a means for an "automatic[ ]" in col. 10, line 56 "selection function[ ]" in col. 10, line 55 that corresponds to a cropping function that crops a region or "[image] portion[ ]" in col. 2, line 33. ) of the composite digital image (Fig. 3,num. 302: SELECTION PROCESS is a means for an "automatic[ ]" in col. 10, line 56 "selection function[ ]" in col. 10, line 55 that corresponds to a cropping function that crops a region or "[image] portion[ ]" in col. 2, line 33 of the composite digital image or mosaic image of figure 2A.) according to

e1) the cropping criterion (Fig. 3,num. 302: SELECTION PROCESS is a means for an "automatic[ ]" in col. 10, line 56 "selection function[ ]" in col. 10, line 55 that corresponds to a cropping function which crops a region or "[image] portion[ ]" in col. 2, line 33 of the composite digital image or mosaic image of figure 2A according to the cropping criterion of fig. 5, step 502:SELECT SELECTION FUNCTION AND PARAMETERS which uses "parameters to control the cropping function" in col. 11, lines 2-4.),

e11) said cropping region (or "[image] portion[ ]" in col. 2, line 33.) being

e111) a rectangular region (or a shape as mentioned in fig. 5,num. 506. Note that the shape of fig. 5,num. 506 corresponds to "cropping functions" in col. 2, line 32 and "cropping function" in col. 11, line 3 and image portion of col. 2, line 33 since an image portion does have a shape.) having said aspect ratio L:H ("cropping...size" in col. 6, line 15.), and

e112) having size ("cropping...size" in col. 6, line 15.) and location ("select[ed]...portion" in col. 2, lines 32,33 includes "cropping functions" in col. 2, line 32 that corresponds to a region of interest of fig. 5,num. 506.) determined by the cropping criterion ("parameters to control the cropping function" in col. 11, lines 2-4.); and

f) cropping (Fig. 5, step 518:APPLY SELECTION FUNCTION crops the image based on step 506 of fig. 5.) the composite digital image (mosaic image of figure 2A.) to the cropping region to form a cropped digital image (at the output of step 518: APPLY SELECTION FUNCTION.);

Burt et al. does not disclose the remaining limitations of claim 3, but does teach "cropping functions" in col. 2, line 32 that "limit the size of [a] mosaic" in col. 6, line 15 as shown in figures 2A-2C and fig. 7,num. 706. However, Burt e al. is deficient in a teaching that can limit the size of a mosaic. However, given the above-mentioned figures, Burt et al. suggests to one of ordinary skill in the art that a mosaic image can be cropped in a plurality of ways especially in the horizontal direction to limit the size of a mosaic.

Takiguchi et al. teaches cropping and limiting the size of a mosaic as shown in figures 6A-64C, 65,67,fig. 69,num. 107:

g) wherein the cropping criterion specifies that the cropped digital image (fig. 69,num. 107) is the composite digital image region (fig. 69,num. 107) that is largest in area of:

g1) the set of all the composite digital image regions (fig. 67, num. 71 and another rotated image region labeled "C".) having said aspect ratio (or the lengths between points p1 and p4 for the first length and p1 and p2 for the second length. Thus the claimed aspect ratio or shaded region of fig. 67 is common in both images of fig. 67); and the additional limitation of:

a) wherein the source digital images have pixel values (or luminance values along the luminance axis of figure 23) that are linearly related to scene intensity(since the luminance values along the luminance axis are in a linear arrangement along the luminance axis and where each luminance value on the luminance axis corresponds to the claimed scene intensity or the luminance of either PAPER or a CHARACTER as shown in fig. 23) and

b) the step of providing source digital images further comprises:

b1) applying a metric exposure transform (or a histogram as shown in fig. 23) to a source digital image such that the pixel values of the source digital image are linearly related to scene intensity (as described in paragraph "a)" above.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Burt et al.'s teaching of "cropping functions" in col. 2, line 32 that "limit the size of [a] mosaic" in col. 6, line 15 as shown in figures 2A-2C and fig. 7,num. 706 with Takiguchi et al.'s lengths between points p1 and p4 for the first length and p1 and p2 for the second length in order to achieve the goal of Burt et al.'s teaching to "limit the size of [a] mosaic" in col. 6, line 15 as shown in figures 2A-2C and fig. 7,num. 706.

In addition, it would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Burt et al.'s fig. 7,num. 706 with Takiguchi et al.'s teaching of fig. 23 that determines certain "areas" (Takiguchi et al., col. 23, line 3) of an image, since Takiguchi et al.'s teaching of figure 23 enables Burt et al. to achieve the goal of "enhancing specific areas" (Burt et al., col. 13, line 6) that were determined using the method of Takiguchi et al.

Regarding claim 13, the combination of Burt et al. teaches the method claimed in claim 3, wherein the step of combining (Fig. 3,num. 304:COMBINATION PROCESS) source digital images (Fig. 2A shows a plurality of partially overlapping images for combining.) further comprises the steps of:

i) warping the source digital images to compensate for distortion due to perspective projection, yielding warped digital images (Burt et al. states, " The aligning process [shown in figure 3,num. 300:ALIGNMENT PROCESS] is accomplished by warping the images to one another (col. 5, lines 63,64).");

ii) aligning the warped digital images to identify overlapping regions (Figure 2A shows a group equally spaced images that are aligned using the aligning process shown in figure 3,num. 300:ALIGNMENT PROCESS with overlapping portions shown by the dashed rectangles and mentioned in col. 17; lines 35-37.); and

iii) blending (Fig. 3,num. 304:COMBINATION PROCESS receives the aligned image outputted from fig. 3,num. 300 via numeral 302 to "seamlessly combine" images in col. 6, lines 18-21.) the warped digital images in the overlapping regions (Figure 2A shows a group equally spaced images that are aligned using the aligning process shown in figure 3,num. 300:ALIGNMENT PROCESS with overlapping portions shown by the dashed rectangles and mentioned in col. 17, lines 35-37.) to form a composite digital image (Output of figure 3,num. 304 is a composite digital image.).

Regarding claim 14, the combination of Burt et al. teaches the method claimed in claim 13, wherein the step of blending warped digital images (Fig. 3,num. 304:COMBINATION PROCESS receives the aligned image outputted from fig. 3,num. 300 via numeral 302 to "seamlessly combine" images in col. 6, lines 18-21.) includes (Fig. 3, num. 304: COMBINATION PROCESS receives weight from fig. 3, num. 302:SELECTION PROCESS) calculating a weighted average of the pixel values (fig. 3,num. 302: SELCTION PROCESS calculates a weight shown in detail in figure 5,num. 511: WEIGHTING for the aligned image which contains overlap.) in the overlapping region (Weights are applied to an image with overlap regions shown in figure 2A.).

Regarding claim 16, the combination of Burt et al. teaches the method claimed in claim 3, wherein the step of combining (Fig. 3,num. 304:COMBINATION PROCESS) source digital images (Fig. 2A shows a plurality of partially overlapping images for combining.) further comprises warping (Fig. 3, num. 304:COMBINATION PROCESS receives ALIGNMENT INFORMATION which warps images together.) a composite digital image (Fig. 3, Label: INPUT IMAGE) to simulate projection onto a geometrical surface (Fig. 7,num. 706 is a flat surface for displaying an image.) suitable for viewing.

Regarding, claim 27, the combination of Burt et al. teaches a computer program product stored on a computer readable medium for performing the method of claim 1 in figure 8, num. 812:STORAGE.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burt et al. (US Patent 5,649,032 A) in view of Takiguchi et al. (US Patent 6,549,681 B1).and further in view of Seitz et al. (View Mophing, Proceedings of the 23rd annual conference on Computer graphics and interactive techniques, ACM Press, 1996, pp. 21-30).

Regarding claim 15, the combination of Burt et al. does not teach the limitation of claim 15, but does suggests other forms of blending shown in figure 6,num. 614:OTHER.

However, Seitz et al. teaches a method, wherein a step of blending warped digital images (fig. 4 has images $I_o$ with "^" on top of $I_o$ and $I_1$ with a "^" on top of $I_1$ are warp images that corresponds to step 1 or prewarping on page 24, right column.) further comprises the steps of:

i) projecting (A projective transform "H" is applied to the images $I_o$ with "^" on top of $I_o$ and $I_1$ with a "^" on top of $I_1$ in the above step 1.) the warped digital images (fig. 4 has images $I_o$ with "^" on top of $I_o$ and $I_1$ with a "^" on top of $I_1$ are warped images that corresponds to step 1 or prewarping on page 24, right column.) to simulate image capture on parallel image planes (Fig 4 shows the images $I_o$ with "^" on top of $I_o$ and $I_1$ with a "^" on top of $I_1$ in a parallel plane.), forming projected digital images (The images $I_o$ with "^" on top of $I_o$ and $I_1$ with a "^" on top of $I_1$ are pre-warped and projected digital images);

ii) morphing (Step 2:Morph on page 24, right column) the projected digital images (The images $I_o$ with "^" on top of $I_o$ and $I_1$ with a "^" on top of $I_1$ are pre-warped and projected digital images) in the overlapping regions (Morphing of step 2 uses "corresponding points" between both of the above images.) to form a projected composite digital image (Figure 4, image $I_s$ with a "^" on top of the $I_s$ is generated from the above two images.)

iii) choosing viewing parameters (Page 26, section 4.1:Controlling the Morph using "$H_s$" allows interaction of the morphing.) for a composite digital image (fig. 4, image $I_s$); and

iv) re-projecting (Step 3:Postwarp on page 24, right column uses a projective transform, "H".) the projected composite digital image (Figure 4, image $I_s$ with a "^" on top of the $I_s$ is generated from the above two images.) to simulate image capture with the chosen viewing parameters (Page 26, section 4.1:Controlling the Morph [step 2 on page 24,right column] using "$H_s$" allows interaction of the morphing.), forming a composite digital image (fig. 4, image $I_s$).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the combination of Burt et al.'s teaching of another blending technique shown in figure 6, num. 614:OTHER with Seitz et al.'s teaching of blending or "view morphing enables transitions between images of different objects that give a strong sense of metamorphosis in 3D (Seitz et al., page 27, section: CONCLUSIONS)."

10. Claims 17,18, 22, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burt et al. (US Patent 5,649,032 A) in view of Takiguchi et al. (US Patent 6,549,681 B1) further in view of Yoshida et al. (US Patent 6,266,128 B1).

Regarding claim 17, the combination of Burt et al. does not teach the limitation of claim 17, but does suggest that a user can select a size and shape of an image as shown in figure 5,num. 506: SELECT REGION OF INTEREST SIZE AND SHAPE.

However, Yoshida et al., in the field of endeavor of printing images from a camera, teaches claim 17 of a method, wherein an aspect ratio is a portrait aspect ratio and landscape ratio in col. 7, lines 47-56.

Claim 18 was addressed in claim 17.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Burt et al.'s suggestion of a user selectable size and shape with Yoshida's teaching in col. 7, lines 47-56, because Yoshida's teaching "has a good or fine appearance, without making a useless or wasteful space on the printing paper (Yoshida, col. 8, lines 3-7)."

Regarding claim 22, the combination of Yoshida teaches the method claimed in claim 1, wherein the aspect ratio is 2:3 and 9:16 and 1:3 in col. 7, lines 42-47.
Claims 23 and 24 were addressed in claim 22.

11. Claims 19, 20, 21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burt et al. (US Patent 5,649,032 A) in view of Takiguchi et al. (US Patent 6,549,681 B1) further in view of Suzuki et al. (US Patent 6,094,218 A).

Regarding claim 19, the combination of Burt et al. does not teach the limitation of claim 19, but does suggest that a user can select a size and shape of an image as shown in figure 5,num. 506: SELECT REGION OF INTEREST SIZE AND SHAPE.

However, Suzuki et al., in the field of endeavor of displaying and trimming images, teaches the limitation of claim 19, wherein the aspect ratio is 3:2 and 16:9 and 3: 1 in col. 6, lines 36-39.

Claims 20 and 21 were addressed in claim 19.

Regarding claim 25, Suzuki et al. teaches a method, wherein an aspect ratio ("aspect ratio" in col. 9, line 48) is included as meta-data ("magnetic information" in col. 9, line 49) with at least one source digital image ("frame image obtained from the scanner (col. 9, line 51)...").

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Burt et al.'s teaching of a user selectable size and shape with Suzuki et al.'s teaching of an aspect ratio as meta data, because "a user can easily and simply perform an operation to obtain the desired image...and...can save the results (Suzuki et al., col. 4, lines 46-50)."

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wagensonner et al. (US Patent 4,812,903 A) is pertinent as teaching of transforming 13 a color space using logarithms 17 as shown in fig. 1.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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